

SELF-CALIBRATING SPECTROMETERS AND AUTO-CALIBRATION METHODS

ABSTRACT

Auto-calibrating spectrometers and methods that measure transmission or reflection versus wavelength of a sample without need for calibration for long periods of time. Reflection and transmission spectrometers along with auto-calibrating methods for use therewith are disclosed. Light is focused onto a sample using a lens or similar optical element that transmits light towards the sample reflects light impinging upon it, and transmits light reflected from the sample. If one monitors the light reflected from the first lens and sample, very useful information is available related to the system response versus time. The present invention monitors the reflected light from the first lens and sample, and corrects for the system changes over time using this reflected light.